**ABSTRACT**

**Background: Critical limb ischaemia (CLI) affects nearly 150,000 people in India. Of these, only about 50% have the possibility of primary reconstruction. The remaining patients end up invariably with major amputation. Unlike in western countries, Indian patients are unfortunately much younger; the mean age of patients in our study was 44.9 years. The aim of this study was to analyse a simple and safe alternative treatment to improve the rate of limb salvage in these patients. Autologous bone marrow transplant seems to have the potential to achieve limb salvage in patients with non-reconstructable CLI.**

**Aim: To study the safety and efficacy of autologous bone marrow aspirate concentrate (BMAC) treatment in patients with CLI due to either atherosclerosis or thromboangiitis obliterans.**

**Material and methods: The study enrolled 40 patients with CLI. The enrollment was carried out between November 2014 and September 2015. All patients were included after strictly following the inclusion and exclusion criteria. The patients were divided into two groups. Patients in group 1 received BMAC by the intramuscular route to the predetermined site in the leg along the posterior tibial or anterior tibial artery under regional anaesthesia, and group 2 was managed conservatively. The patients were followed up for 24 weeks.**

**Results: A total of 40 patients were enrolled for the study and 37 completed 6 months of follow-up as per the protocol. Three patients were lost to follow-up. Eight patients underwent major amputation- one from stem cell group and 7 from control group. Sixteen patients underwent minor amputation- five from stem cell group and eleven from control group.**

**Conclusion: Autologous bone marrow stem cell therapy is a safe and effective treatment for an otherwise non-reconstructible critical limb ischemia.**

**KEY WORDS: Therapeutic angiogenesis, Bone marrow aspirate concentrate, No- Option Critical Limb Ischemia**